In The Claims:

1. (Currently Amended)   A pre-crash sensing system for an automotive vehicle coupled to a countermeasure system having a countermeasure, said pre-crash sensing system comprising:

an object sensor generating an object signal, an object distance signal, object azimuth position signal and object relative velocity signal;

an object classifier coupled to the object sensor generating an object classification signal corresponding to a type of a second vehicle <u>and an orientation signal corresponding to an orientation of the second vehicle</u> in response to the object signal; and

a controller coupled to said object sensor and said object classifier, said for controller activating said countermeasure in response to said object distance, object azimuth position, relative velocity, <u>said orientation signal</u> and said object classification signal.

2. (Previously Presented)   A system as recited in claim 1 wherein said a vision system generates an object signal, object distance signal, object azimuth position signal, and object relative velocity signal.

3. (Original)   A system as recited in claim 1 wherein said object classifier generates said object classification signal in response to at least one selected from a target vehicle ground clearance, tire profile, tire size, tire separation, number of tires, object size, cross-section contour, presence of a bumper, presence of front and rear license plates, front and rear lighting, front grill, operating front and rear windshield wipers, exterior mounted spare tire, side view mirrors, wheel well profile, steering wheel profile, human passenger profiles, rear axle and exhaust system.

4. (Original)   A system as recited in claim 1 wherein said object sensor comprises a vision system, a radar system, a lidar system or combinations of these sensor systems.

5. (Previously Presented)   A system as recited in claim 3 wherein said object size comprises height.

2
(09/683,884)

6. (Previously Presented) A system as recited in claim 3 wherein said object size comprises object area and object height.

7. (Previously Presented) A system as recited in claim 3 wherein said object size comprises width.

8. (Original) A system as recited in claim 1 further comprising a vehicle speed sensor generating a speed signal corresponding to the longitudinal speed of the vehicle; wherein said controller activates either a first countermeasure or a second countermeasure in response to the longitudinal speed signal.

9. (Currently Amended) A pre-crash sensing system coupled to a countermeasure system having a first countermeasure and a second countermeasure, said pre-crash sensing system comprising:

an object sensor generating an object signal, an object distance signal, an object azimuth position signal, and object relative velocity signal;

an object classifier coupled to the object sensor generating an object classification signal corresponding to a type of a second vehicle and an orientation signal corresponding to an orientation of the second vehicle in response to the object signal; and

a controller coupled to said object sensor and said object classifier for said controller activating said first countermeasure or said second countermeasure or said first and second countermeasures in response to said object distance, object azimuth position, relative velocity, said orientation signal and said object classification signal.

10. (Previously Presented) A system as recited in claim 9 wherein said object signal comprises an object size signal, wherein object size comprises height.

11. (Previously Presented) A system as recited in claim 9 wherein said object signal comprises an object size signal, wherein object size comprises object area and height.

12. (Previously Presented)   A system as recited in claim 9 wherein said controller object classifier classifies said object and determines an object orientation in response to said object distance, said object size and said object height.

13. (Currently Amended)   A method for operating a pre-crash sensing system for an automotive vehicle having a countermeasure system, said method comprising:

establishing a detection zone relative to the vehicle;

detecting an object within the detection zone;

determining an object distance, object azimuth position and relative velocity;

determining an object classification corresponding to a type of a second vehicle and an orientation signal corresponding to an orientation of the second vehicle; and

activating the countermeasure system in response to the object distance, object azimuth position, object relative velocity, orientation and classification.

14. (Original)   A method as recited in claim 13 further comprising determining an object size and wherein activating the countermeasure comprises activating the countermeasure in response to object distance, azimuth position, relative velocity, classification, and object size.

15. (Original)   A method as recited in claim 14 wherein determining object size comprises determining an object height; wherein activating the countermeasure system in response to the object size comprises activating the countermeasure system in response to the object height.

16. (Original)   A method as recited in claim 14 wherein determining an object size comprises determining an object cross-sectional area; wherein activating the countermeasure system in response to the object size comprises activating the countermeasure system in response to the object cross-sectional area.

17. (Original)   A method as recited in claim 14 wherein determining an object size comprises determining an object cross-sectional area and object height;

4
(09/683,884)